AMENDMENTS TO THE CLAIMS

1-5 (Canceled)

6. (Withdrawn) The improved gerotor pump of claim 5 wherein the means for selectively applying the higher pressure valued one of the inlet and outlet fluids against the floating ring at a position juxtaposed to the gerotor set's in-mesh position and the lower pressure valued one of the inlet and outlet fluids against the floating ring at a position juxtaposed to the gerotor set's out-of-mesh position respectively comprise a first pin disposed in a first laterally offset slot formed on the lower pressure side of a preferred eccentricity axis of the gerotor pump in the portion of the periphery of the floating ring juxtaposed to the gerotor set's in-mesh position, and a second pin disposed in a second laterally offset slot formed on the higher pressure side of the preferred eccentricity axis in the portion of the periphery of the floating ring juxtaposed to the gerotor set's out-of-mesh position.

7. (Withdrawn) The improved gerotor pump of claim 6 wherein first and second pockets are respectively formed symmetrically about the eccentricity axis on the inner surface of the floating ring at positions juxtaposed to the in-mesh and out-of-mesh positions of the gerotor set and first and second holes are formed in the floating ring for respectively coupling the first and second pockets to the higher and lower pressure valued ones of the inlet and outlet fluids so impressed against the floating ring in order to hydrostatically force the outer rotor against the inner rotor at the gerotor set's in-mesh position.

8. (Withdrawn) The improved gerotor pump of claim 5 wherein the means for selectively applying the higher pressure valued one of the inlet and outlet fluids against the floating ring at a position juxtaposed to the gerotor set's in-mesh position and the lower pressure valued one of the inlet and outlet fluids against the floating ring at a position juxtaposed to the gerotor set's out-of-mesh position respectively comprise a first set of pins each disposed equidistantly from the preferred eccentricity axis in a first set of offset slots respectively formed in the portion of the periphery of the floating ring juxtaposed to the gerotor set's in-mesh position wherein means are provided for fluidly coupling the first set of slots one-to-another, and a second set of pins each disposed equidistantly from the preferred eccentricity axis in a second set of offset slots respectively formed in the portion of the periphery of the floating ring juxtaposed to the gerotor set's out-of-mesh position wherein means are provided for fluidly coupling the space between the second set of slots to the lower pressure valued one of the inlet and outlet fluids.

9. (Withdrawn) The improved gerotor pump of claim 8 wherein first and second pockets are respectively formed symmetrically about the eccentricity axis on the inner surface of the floating ring at positions juxtaposed to the in-mesh and out-of-mesh positions of the gerotor set and first and second holes are formed in the floating ring for respectively coupling the first and second pockets to the higher and lower pressure valued ones of the inlet and outlet fluids so impressed against the floating ring in order to hydrostatically force the outer rotor against the inner rotor at the gerotor set's in-mesh position.

10. (Canceled)

11. (New) An improved gerotor pump of the type having a gerotor set comprising:

an inner rotor having N outwardly extending lobes with N approximately circularly shaped grooves therebetween being in mesh with and, in response to rotational motion of a drive shaft, rotationally driving an eccentrically disposed outer rotor about an eccentricity offset rotation axis located along a preferred eccentricity axis, the outer rotor being formed with N + 1 inwardly extending circularly shaped elements with N + 1 approximately circularly shaped grooves therebetween, whereby N + 1 pumping chambers are formed between the outwardly extending lobes of the inner rotor, the inwardly extending circularly shaped elements of the outer rotor and the grooves of either, a floating ring having a bore wherein the outer rotor is hydro-dynamically supported for rotation, and a housing having an internal gerotor pump cavity and first and second housing ports located on opposite sides of the preferred eccentricity axis, wherein radial face slots are provided in at least one face of the outer rotor for fluidly coupling fluid with the N + 1 approximately circularly shaped grooves of the outer rotor respectively with first and second fluid commutation ports formed on opposite sides of the floating ring in a corresponding face or faces of the floating ring, further wherein the floating ring and the internal pump cavity have slidingly engaging floating ring and housing guide features for locating the floating ring such that the center of the floating ring bore is laterally located along the preferred eccentricity axis and the floating ring is oriented in the roll direction such that the first and second fluid commutation ports are symmetrically located on either side of the preferred eccentricity axis, and still further wherein the first and second housing ports are located and

formed within the housing in such a manner that first and second housing ports respectively fluidly communicate with the first and second fluid commutation ports.

12. (New) The improved gerotor pump of claim 11 wherein means are provided for forcibly positioning the outer rotor along the eccentricity axis against the inner rotor at the gerotor set's in-mesh position.

13. (New) The improved gerotor pump of claim 12 wherein the means for forcibly positioning the outer rotor along the eccentricity axis against the inner rotor at the gerotor set's in-mesh position comprises means for selectively coupling fluid from the higher pressure valued one of the first and second housing ports to a selected portion of the outer periphery of the floating ring at a position juxtaposed to the gerotor set's in-mesh position, and concomitantly selectively coupling fluid from the lower pressure valued one of the first and second housing ports to a selected portion of the outer periphery of the floating ring at a position juxtaposed to the gerotor set's out-of-mesh position.

14. (New)An improved gerotor pump of the type having a gerotor set comprising an inner rotor having N outwardly extending lobes with N approximately circularly shaped grooves therebetween being in mesh with and, in response to rotational motion of a drive shaft, rotationally driving an eccentrically disposed outer rotor about an eccentricity offset rotation axis located along a preferred eccentricity axis, the outer rotor being formed with N + 1 inwardly extending circularly shaped elements with N + 1 approximately circularly shaped grooves

therebetween, whereby N + 1 pumping chambers are formed between the outwardly extending lobes of the inner rotor, the inwardly extending circularly shaped elements of the outer rotor and the grooves of either, a floating ring having a bore wherein the outer rotor is hydro-dynamically supported for rotation, and a housing having an internal gerotor pump cavity and first and second housing ports located on opposite sides of the preferred eccentricity axis, wherein radial face slots are provided in at least one face of the outer rotor for fluidly coupling fluid with the N + 1 approximately circularly shaped grooves of the outer rotor respectively with first and second fluid commutation ports formed on opposite sides of the floating ring in a corresponding face or faces of the floating ring, further wherein the floating ring and the internal pump cavity have a slidingly engaging floating ring and housing guide features for locating the floating ring such that the center of the floating ring bore is laterally located along the preferred eccentricity axis and the floating ring is oriented in the roll direction such that the first and second fluid commutation ports are symmetrically located on either side of the preferred eccentricity axis, still further wherein the first and second housing ports are located and formed within the housing in such a manner that the first and second housing ports respectively fluidly communicate with the first and second fluid commutation ports, and yet still further wherein a piston means bearing against the floating ring at a position juxtaposed to the gerotor set's in-mesh position is utilized for forcibly positioning the outer rotor along the eccentricity axis against the inner rotor at the gerotor set's in-mesh position.

15. (New) An improved method for supporting a gerotor set having inner and outer rotors in a gerotor pump further comprising a housing and a floating ring having a bore wherein

the outer rotor is hydro-dynamically supported for rotation, wherein the method comprises the steps of:

locating the floating ring such that the center of the floating ring bore is laterally located along a preferred eccentricity axis of the gerotor pump; and

applying force to the floating ring along the preferred eccentricity axis toward the gerotor set's in-mesh position.

16. (New) An improved method for supporting a gerotor set in a gerotor pump comprising a housing having an internal gerotor pump cavity and first and second housing ports located on opposite sides of the preferred eccentricity axis, a gerotor set comprising inner and outer rotors, and a floating ring having a bore wherein the outer rotor is hydro-dynamically supported for rotation, the floating ring being postionally constrained for lateral location along the preferred eccentricity axis at a selected roll orientation, wherein the method comprises the steps of:

selectively coupling fluid from the higher pressure valued one of the first and second housing ports to a selected portion of the outer periphery of the floating ring at a position juxtaposed to the gerotor set's in-mesh position;

concomitantly selectively coupling fluid from the lower pressure valued one of the first and second housing ports to a selected portion of the outer periphery of the floating ring at a position juxtaposed to the gerotor set's out-of-mesh position; and

hydrostatically coupling those pressure values to selected portions of the space between the floating ring and the outer rotor, whereby the outer rotor is forcibly positioned against the inner rotor at the gerotor set's in-mesh position.